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THE FACES OF LEADERS: SEXUAL DIMORPHISM, PERCEIVED TRAITS, AND VOTING IN CONTEXT

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VOTING AT FACE VALUE: FACIAL CHARACTERISTICS, PERCEIVED TRAITS, AND VOTING IN CONTEXT

Human groups are unusual among primates in that our leaders are often democratically selected. Many social judgements are made using only facial information and here we examined the potential influence of facial perceptions on leadership elections. We address this possibility using a case study of the 2004 US presidential candidates George Bush and John Kerry. We removed recognition effects by applying the difference between their faces to a neutral, unfamiliar face, and then measured how the difference in their facial physiognomies influenced attributions and hypothetical voting decisions. The 'plus-Bush' and 'plus-Kerry' faces were seen to possess different but potentially valued leadership traits. For voting, preference for face version was context-dependent. Raters preferred the plus-Bush face as a war-time leader and the plus-Kerry face as a peace-time leader. We also examined voting to computer graphic manipulations of masculinity showing that masculine faces were voted for more in war-time and feminine faces in peace-time contexts, suggesting that attitudes to sexual dimorphism in faces play an important role in voting decisions. Both findings demonstrate that voter's attitudes to the physical appearance of politicians may interact with their perceptions of the current political climate to determine voting behaviour. Such flexible leadership choice may reflect the selection of leaders who are most beneficial to the individuals of a group at a particular time or in a particular situation.

Introduction

Leaders are ubiquitous in human populations and potentially leadership choice has a biological as well as a social basis. Attractiveness may signal quality (Thornhill & Gangestad 1999) and is associated with a variety of positive personality attributions (Eagly et al. 1991). Attractiveness then is a trait likely to be valued in potential leaders. Many studies demonstrate agreement on judgements of facial attractiveness and personality (Perrett et al. 1998; Zebrowitz 1997), and there is evidence that attractive individuals are more likely to be hired for jobs than less attractive individuals (Chiu & Babcock 2002; Marlowe et al. 1996). It has also been speculated that facial appearance may influence voting decisions in elections since the famous televised debates of Kennedy and Nixon. In one debate, those with visual information, from television, thought that Kennedy had won the debate, while those with only auditory information, from radio, thought that Nixon had won (Kraus 1988). This implies that regardless of policy and good argument, visual appearance has a striking effect on what individuals think about politicians. In line with many positive attributions to attractive individuals, studies show that attractive individuals are more likely to receive votes than unattractive individuals (Budesheim & Depaola 1994).

A major aspect of facial appearance potentially associated with leadership is facial dominance. The expression and physiognomic features associated with dominance are agreed upon cross-culturally (Keating et al. 1981a; Keating et al. 1981b). Dominant appearance appears to influence occupational status in certain settings. Facial dominance of the graduates from the West Point Military Academy in 1950 predicted their final rank at the

end of their careers (Mueller & Mazur 1996; Mueller & Mazur 1997). Facial masculinity, linked to facial dominance (Perrett et al. 1998), positively relates to testosterone level (Penton-Voak & Chen 2004), suggesting a link to actual dominant behaviour (Mazur & Booth 1998) in dominant faced individuals. Unlike attractiveness, dominance may not be a valued trait in leaders. Facial dominance may be linked to leadership status due to acquiescent or submissive responses by other group members rather than by group assent. In fact masculine faces, as well as looking dominant, also appear untrustworthy (Perrett et al. 1998). Many primate societies are characterised by strict hierarchies in which physical dominance is a prominent determinant (Smuts et al. 1987). Humans, however, are somewhat unusual in that many societies choose their leaders democratically, leaving the potential to select individuals with pro-social skills over more physically dominant individuals. It is difficult to then to predict whether dominance will be favoured in leader choice.

It has recently been demonstrated that, in a large sample of head shot images of politicians, ratings of competence are related to the outcome of actual US congressional elections (Todorov et al. 2005). This finding links physical appearance from photographs to election outcome (Martin 1978), but included information from facial expression, clothing and posture, as well as facial appearance and shape. Further to these studies, while it is likely that competence is important in almost all leadership decisions, it is possible that different faces hold different valued traits that may be more or less important according to current circumstances. Such context-dependent variability in choice is a common feature in other human preference research (Little et al. 2001; Little et al. 2002a; Little et al. 2002b).

Here we examine attributions of attractiveness, dominance and personality, as well as hypothetical voting in different contexts based on the facial features of George Bush and John Kerry because these prominent individuals publically argued over their suitability to lead in a time of war during their election campaigns. One significant problem in studying the facial appearance of famous figures is recognition. Once a perceiver recognises an individual they may use previously acquired information in their judgements. To remove recognition of the candidate as a factor in the judgements, the difference in shape between Bush's and Kerry's face was applied to a neutral face image (Tiddeman et al. 2001) creating a face exaggerating Bush's features as they differ from Kerry's and a face exaggerating Kerry's features as they differ from Bush's (Figure 1, methods). The transformed images thus held the features that differentiate the two candidate's faces but did not contain specific cues to their identities. Facial masculinity, because of its link to dominance, was also examined in terms of voting for leaders. In contrast to previous studies described above, our stimuli control for extraneous factors such clothing and expression, restricting any influence on 'voter' perception to differences in facial shape only.

We asked two groups of participants to make forced-choice decisions for either physical and personality judgements or hypothetical voting for the Bush/Kerry images. Previous studies have shown that masculinity in faces is associated with personality attributions, masculine faces are seen as more masculine and dominant but less co-operative and less attractive than feminine faces (Perrett et al., 1998), and so we examined only voting to masculine/feminine faces.

Methods

Participants – 57 individuals (45 female, 12 male, aged 18-41, mean = 21.7, SD = 4.6) made forced-choice decisions for the physical and personality judgements. 101 different individuals (69 female, 32 male, aged 18-30, mean = 21.0, SD = 2.3) made forced-choice decisions for the voting judgements. Data was collected in October 2004, prior to the US election. A third sample of 91 individuals (44 female, 47 male, aged 18-40, mean = 21.8, SD = 3.9) made forced-choice decisions for the voting judgements for the masculine/feminine faces.

Stimuli - Two face images were presented to participants for judgements of Bush vs. Kerry (Figure 1). A single composite of a young male (10 images, taken under standardised lighting and with a neutral expression) was transformed in shape only using the linear difference between a composite of George Bush and a composite of John Kerry (5 images each, Figure 1). Transformations were based on 50% of the difference between the Bush and Kerry composites. Composites were made by marking a number of landmark features, calculating an average shape for each and warping each constituent image to the average before blending the images together into a single image. Masculine/feminine images were made in the same way but using the same composite base image but transforming +/- 50% based on the difference between a composite of 50 male faces and a composite of 50 female faces (Figure 1, see Perrett et al., 1998). All composites were made symmetric before any manipulations. Transforming and composite creation used

specially designed software (Perception Laboratory, University of St Andrews, see (Tiddeman et al. 2001).

Figure 1 about here

Procedure - Participants filled in a short questionnaire assessing their age and sex. The face pairs were then presented via a java applet randomising the side on which the images were presented. On each trial clicking a button below the image indicated the raters' choice based on a particular trait and moved the program onto the next trial. Participants made seven physical and personality judgements in response to the on-screen prompt "Please indicate which face you think looks most X by clicking below", where X was replaced by adjectives offered in the following order: attractive, masculine, dominant, strong leader, likable, forgiving, intelligent. The second and third set of participants "voted" in response to the on-screen question "Please indicate which face you would vote for to run your country" and then twice more in response to the same question followed by "in a time of war" or "in a time of peace" for either the Bush/Kerry or masculine/feminine faces.

Results

Choice of face was analysed with one-way chi square tests (DF=1). The 'plus-Bush' (anti-Kerry) face was seen as more masculine (65%/35%, $\chi 2 = 5.1$, $p = .024$) and dominant (63%/37%, $\chi 2 = 3.9$, $p = .047$) than the 'plus-Kerry' (anti-Bush) face, while the plus-Kerry face was seen as more attractive (79%/21%, $\chi 2 = 19.1$, $p < .001$), forgiving (82%/18%, $\chi 2 = 24.0$, $p < .001$), likable

(75%/25%, $\chi 2 = 14.8$, $p = .024$) and intelligent (67%/33%, $\chi 2 = 6.3$, $p = .012$) than the plus-Bush face. The plus-Bush face was selected by more individuals as a strong leader (58%/42%, $\chi 2 = 1.4$, $p = .23$) though this was not significant. Age was not correlated with any of the choices (all $p > .27$) and independent samples t-tests revealed no difference between male and female raters for the scores (all $p > .18$).

The plus-Bush face was selected by more individuals as the face they would vote for to run their country (56%/44%, $\chi 2 = 1.7$, $p = .20$) than the plus-Kerry face. While not significant here, such trends could help win elections if they hold for real voting. The faces were differently voted for according to war- or peace-time leadership. The plus-Bush face was 'voted' for most when voting in a time of war (74%/26%, $\chi 2 = 23.8$, $p < .001$) and the plus-Kerry face was voted for most when voting in a time of peace (61%/39%, $\chi 2 = 15.1$, $p < .001$, Figure 2). Age was not correlated with any of the voting choices (all $p > .43$) and independent samples t-tests revealed no difference between male and female raters for voting scores (all $p > .41$).

Figure 2 about here

Voting for the masculine versus feminine face revealed that there was no significant difference when individuals were asked to vote for an individual to run their country (51%/49%, $\chi 2 = 0.1$, $p = .92$). The faces were, like the Bush/Kerry faces, differently voted for according to war- or peace-time leadership. The masculine face was 'voted' for most when voting in a time of

war (64%/36%, $\chi 2 = 6.9$, $p = .003$) and the feminine face was voted for most when voting in a time of peace (60%/40%, $\chi 2 = 4.0$, $p = .046$, Figure 3). Age was not correlated with any of the voting choices (all $p > .42$) and independent samples t-tests revealed no difference between male and female raters for voting scores (all $p > .13$).

Discussion

Caricaturing a face along a Bush-Kerry dimension revealed different perceptions in terms of physical appearance, personality and hypothetical voting behaviour. The faces of the two appear well matched when it comes to a general vote and this may reflect that Bush and Kerry's faces each hold different aspects that would be valued in a leader – dominance for Bush and likeability/intelligence for Kerry. Attractiveness cannot be the sole determinant of perceived leadership ability in these faces as the plus-Bush face was more likely voted for in a time of war despite being judged of lower attractiveness (it also received a higher percentage choice in a straight vote, though not significantly). Although we acknowledge that voting decisions are dependent on many other factors than the candidate's faces, the findings are also surprisingly consistent with the outcome of the real voting in the 2004 election. The final polling revealed, from a 99% return for the two candidates, that Bush had 51% and Kerry had 48% of votes, very similar to the 56/44% split here when judges were asked which face they would vote for as the leader of their country. This result is inline with Todorov et al. (2005) who show a link between hypothetical votes to images and real voting.

The association between perceived dominance and masculine faces (Perrett et al., 1998) is somewhat similar to the association of masculinity and dominance and the plus-Bush face. Likewise the pro-social perceptions of feminine faces resemble the feminine and pro-social attributions to the plus-Kerry face. Potentially it is the masculine/dominant versus feminine/prosocial difference between Bush and Kerry's features that mean masculinised faces are voted for in the same way as the Bush face and femininised faces voted for in the same way as the Kerry face in the different voting contexts. While neither masculinity nor femininity was favoured in a straight forward vote, the masculine face was voted for more in the war-time context and the feminine face was voted for more in the peace-time context.

Our results then show that judges have conditional values for the faces of leaders which vary with current circumstances: the dominant features of Bush and masculine faces were favoured in a leader during "war-time", while the more forgiving features of Kerry and feminine faces were favoured in a leader in "peace-time". Preferring a likable, forgiving leader may be expected because traits, such as altruism, trust, and modesty are generally valued characteristics in others (Hampson et al. 1987). In a time of peace, these pro-social attributes may be more beneficial to the group or society and so are of increased value in a leader. However, these same features may not be favoured in a time of war as the possessor may be perceived as being more likely to lose out to more aggressive competitors (Kyl-Heku & Buss 1996). In the context of leadership during a time of war, dominant masculine features may signal that the individual may be better able to stand up for and protect the group or society, while. Facultative choice of leader according to who may

be most useful for a particular situation or context may reflect an adaptation within human social groups, which could potentially benefit the other individuals in a group.

The change in voting for facial shapes according to war or peace context suggests that an individual's perception of the state of world politics and current events might strongly influence his or her choice of leader. Individuals appear to take into account environmental or situational cues, such as the current political climate that we vary here, and select the best candidate accordingly. Interestingly, our results suggest the potential for candidates for leadership positions to promote themselves as a good leader, and thus win votes, by influencing or manipulating their group's/electorate's perception of the current climate or situation in such a way as to be consistent with the particular strengths associated with their facial characteristics and other aspects of their physical appearance. Our results also highlight flexibility of leadership choice in a way that could be regarded as adaptive.

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Figure 1: Transformed composites representing transforms of Bush vs Kerry (Plus-Bush/Anti-Kerry, A, Plus-Kerry/Anti-Bush, B), original composites of Bush (C) and Kerry (D) used to make the transform, and masculinised (E) and feminised (F) faces.

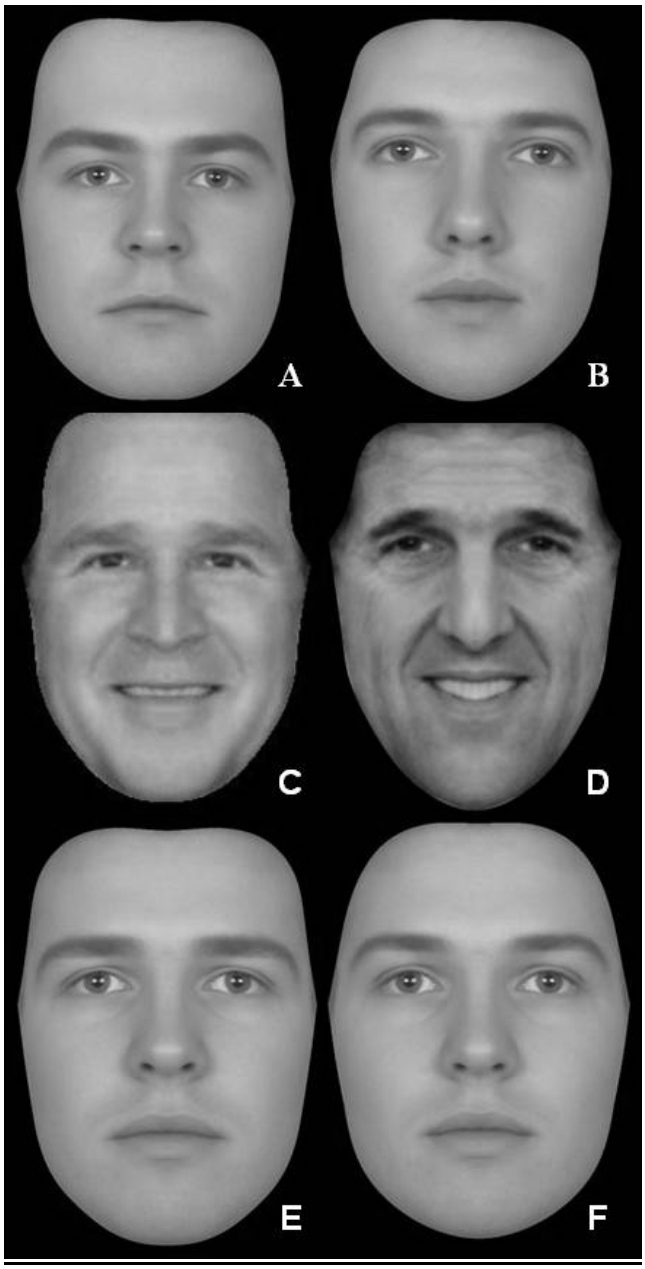

Figure 2: Proportion of 'votes' for "plus-Bush" and "plus-Kerry" (A) and masculine and feminine (B) transformations by scenario